Work Plan & Methodology

Study Area:

Different villages from the eastern side of Pune will be selected. Agriculture soil from four different tehsils (taluka) of eastern Pune like

1) Shirur,
2) Daund,
3) Purander and
4) Baramati

are selected. From these some regional locations will be selected.

Materials & Methods

Analysis of Soil Samples:

Soil samples are air-dried and then passed through a mechanical crusher consisting of two rollers which turn toward each other. The soil then passes through a 10-mesh screen. The rollers are kept clean by large brushes held tightly against them. The soil samples are kept for at least 5 days before being tested, especially for potassium.

The collected soil samples will be kept in the tray and air dried for the period of approximate 1-6 days depending on the moisture content in the sample. Then the sample will be crushed into fine powder using mortar and pestle. Thus the soil sample will be prepared to analyze the parameter like pH, Electrical Conductivity (EC), Water Soluble Salts (Calcium (Ca), Magnesium (Mg), Potassium (K), Sodium (Na), and Chloride (Cl)), Available Nutrients (Sulphate (SO_4), Phosphate (PO_4), Nitrate (NO_3) and Heavy Metals (Chromium (Cr), Cadmium (Cd). Iron (Fe) and Zinc (Zn) in the laboratory using standard methods for soil analysis .

To obtain a momentary or more or less continuous understanding of a soil profile in respect to the micronutrients and useful or harmful micro flora and micro fauna saturations

pollutants, and pH of the soil is to be analyzed. The respective data will allow for the characterization of soil's conditions and tropic assessment. Following contents will be tested by different measures as-

1. To determine the quality of soil in the terms of its pH. (Soil: water::1:2.5)- by pH meter.
2. To determine the lime contents, phosphorous contents.(Olsen method for neutral and alkali soil, Bray and Curtz method for acidic soil)-by Spectrophotometer.
3. To determine the Potassium, Calcium, Magnesium, and Sodium contents(ppm) - NH4OAC method –by flame photometer
4. To determine the Organic contents by Walkley-Black Method
5. To determine Total nitrogen-by Gerhardt Vapodest instrument.
6. To determine Sulphur (ppm) by Turbidimetric method-by Spectrophotometer-169.
7. To determine Iron, Manganese, Zinc, Copper (ppm) by DTPA Lindsay and Norwell method – the Atomic Absorption Spectrophotometer.
8. To determine Boron (ppm) by Azomethine-H method- Spectrophotometer-169.
9. To determine calcium carbonate (%) by Acid Neutralization Method.
10. To determine the soil micro flora and soil micro fauna.
11. To determine texture by feel method.
12. To determine water holding capacity (%) by gravitational method.
13. To determine EC (dSm-1) (Soil: water:: 1:2.5)- by Conductivity meter.
14. To determine chloride (ppm) by Titration method.
15. To determine Cation Exchange Capacity (CEC) (c. mol/Kg) by Ammonium saturation method –Gerhardt Distillator.
16. To determine Field Capacity (%) by Gravitational method.

Plan of Work:

1. **1st Year:**
    a. Referencing for the review of literature study.
    b. In the second quarter of the year, Visit to different localities s of agricultural land.
    c. In third quarter of the year, Collection of soil samples.
    d. In fourth quarter of the year, Testing & analysis of soil.
    e. Preparation of research paper for publication.
2. **2nd Year:**
    a. Analysis and interpretation of Data by tabular and graphical method.
    b. Correlation of data and statistical analysis.
    c. Preparation of research paper for publication.
    d. Thesis completion and submission